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AERIAL PHOTOGRAPHIC ANALYSIS OF GARY DEVELOPMENT LANDFILL

Gary, Indiana

by

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ABSTRACT

This report presents an analysis of color photographs that cover the Gary Development Landfill site in Gary, Indiana. The photographs show the status of the site on May 23, 1985. The analysis focus on identification of various types of waste disposal, surface drainage, erosion, surface disturbances, and any potential threats to the environment.

The color photograph shows what appears to be an old gravel pit that is now an active waste disposal facility. Vehicles with trash in them are visible in the disposal dropoff area. Ground stains and rill erosion were present and three vertical tanks were located in the northeast corner of the site.

The analysis was performed by the U.S. Environmental Protection Agency's Environmental Monitoring Systems Laboratory in Las Vegas, Nevada, in support of the Agency's Region 5 Environmental Services Division and Office of Solid Waste in Washington, D.C. This site is one of thirteen sites in Indiana and Ohio being monitored under this project in order to ensure that activities at the sites comply with the provisions of the Resource Conservation and Recovery Act (RCRA).

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Figure 1. Study area location, Indiana. Scale 1:2,500,000.

INTRODUCTION

This report presents an analysis of color aerial photographs that cover Gary Development Landfill in Gary, Indiana. The site is approximately 25 hectares (62 acres) in size. The photographs show the status of the site on May 23, 1985. This facility is involved in disposal of waste material and the analysis focused on identifying various types of disposal, surface drainage, erosion, surface disturbance, and any potential threats to the environment.

This site is one of thirteen sites in Indiana and Ohio being monitored under this project in order to ensure that activities at the sites comply with the provisions of the Resource Conservation and Recovery Act (RCRA). Table 1 lists all the sites being covered under this project. The analysis of each of these sites used single-date photographs.

The analysis was performed by the U.S. Environmental Protection Agency's (EPA) Environmental Monitoring Systems Laboratory in Las Vegas, Nevada, at the request of the Agency's Region 5 Environmental Services Division and Office of Solid Waste in Washington, D.C.

TABLE 1 (Revised).[1] INDIANA AND OHIO RCRA SITES COVERED UNDER SERIES TS-AMD-85606[2]

Report serial number[2]	Site name	Location
1	Adams Center Landfill	Fort Wayne, IN
2	CECOS International	Williamsburg, OH
3	Conservation Chemical Company	Gary, IN
4	Energy Cooperative, Inc.	East Chicago, IN
5	Evergreen Landfill	Toledo, OH
6	Federated Metal Corp.	Whiting, IN
7	Fondessay Enterprises	Oregon, OH
8	Gary Development Landfill	Gary, IN
9	John Jagiella Property	Leroy, IN
10	Ohio Liquid Disposal	Vickery, OH
11	United States Steel Corporation	Gary, IN
	Westville Oil	Westville, IN
	Wheeler Landfill	Wheeler, IN

[1]The report numbers have been revised since the listing given in report number TS-AMD-85606-7 and previous report in this series.

[2]To identify individual reports, add the report serial number to series number. For example: TS-AMD-85606-1.

METHODOLOGY

Stereoscopic pairs of current aerial photographs are used to perform the analysis. Stereo viewing enhances the interpretation because it allows the analyst to observe the vertical as well as horizontal spatial relationships of natural and cultural features. Stereoscopy is also an aid in distinguishing between various shapes, tones, textures, and colors that can be found within the study area.

Evidence of waste burial is a prime consideration when conducting a hazardous waste analysis. Leachate or seepage resulting from burial and dumping of hazardous materials might threaten existing surface or ground-water sources. Pools of unexplained liquid are routinely noted because they can indicate seepage from buried wastes and may enter drainage channels that allow contaminants to move off the site. An excellent indicator of how well hazardous materials are being handled at a site is the presence or absence of spills, spill stains, and vegetation damage. Trees and other forms of vegetation that exhibit a marked color difference from surrounding members of the same species are labeled "dead," "stressed," or "damaged" based upon the degree of noticeable variation. Vegetation is so labeled only after consideration of the season in which the photographs were acquired.

Drainage analysis determines the direction a spill or surface runoff would follow. Direction of drainage is determined from analysis of the photographs and from U.S. Geological Survey topographic maps. Whenever they are available, 7.5-minute quadrangle maps (scale 1:24,000) are used to show site location and to provide geographic and topographic information.

Results of the analysis are shown on annotated overlays attached to the photos.

The color photographs of Gary Development Landfill (geographic coordinates: 41°36.8'N 87°25.7'W) in Gary, Indiana, were acquired by the EPA's Environmental Monitoring Systems Laboratory in Las Vegas, Nevada, on May 23, 1985, at a scale of 1:6,000 (1 inch equals 500 feet). The photograph in this report has been enlarged to approximately 1 inch equals 277 feet. The study area location is shown on a state map of Indiana (Figure 1). The site location is portrayed on the Highland, Indiana, 7.5-minute topographic quadrangle (Figure 2).

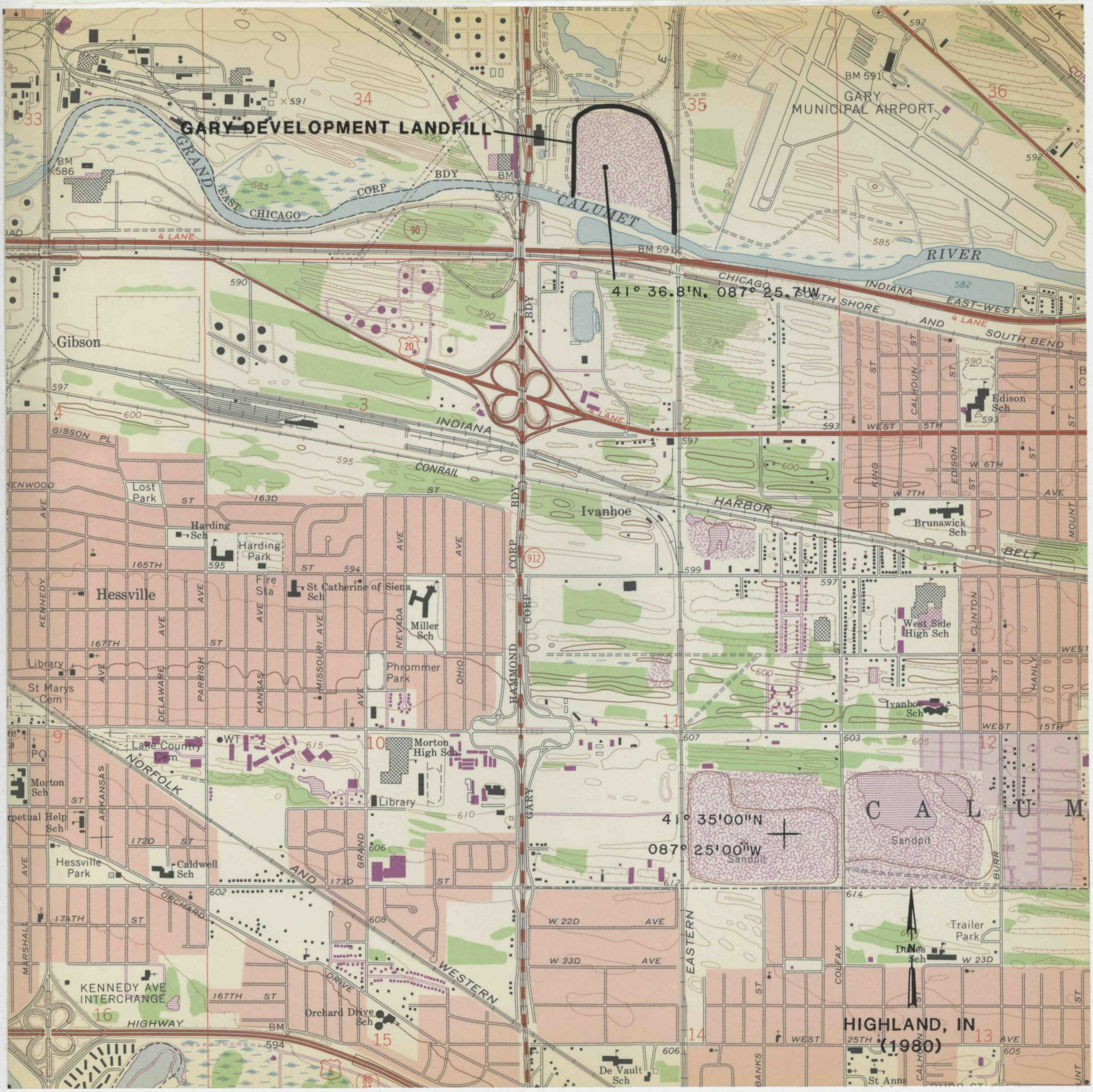

Figure 2. Site location, Gary, Indiana. Scale 1:24,000.

ANALYSIS SUMMARY

The site appears to be an old gravel pit that is now an active waste disposal facility. Vehicles with trash in them are visible in the disposal dropoff area. Ground stains and rill erosion were present and three vertical tanks were located in the northeast corner of the site.

PHOTO ANALYSIS

The Gary Development Landfill appears to be an old gravel pit that is being used for waste disposal. The active part of the landfill is in the pit on the western side of the site. There is a trash collection area at the end of the site access road and trucks are visible along the road. The western portion of the pit has probably been backfilled. The backfilled area extends from the south near the Calumet River to the north portion of the site. Standing liquid is visible at the bottom of the landfill. Heavy equipment is parked in the southwest corner of the site. North of the heavy equipment is a ground stain and some mounded material on the backfill mound. The backfilled area has some rill erosion along its southern side. There is also a ground stain along the southern side of this area. Some rill erosion is also visible in the northeast corner of the site. Runoff follows the erosion and eventually empties into the bottom of the pit. A building and three vertical tanks are north of the rill erosion. In the bottom of the landfill is a small impoundment that has a breach in its containment wall. In the southeast corner of the site is a large ground stain. This stained area may be a backfilled area. Material has been mounded to form berms in this section of the site.

Figure 3. Gary Development Landfill, May 23, 1985. Approximate scale, 1 inch equals 277 feet.

INTERPRETATION CODE

BOUNDARIES AND LIMITS

- FENCED SITE BOUNDARY
- UNFENCED SITE BOUNDARY
- FENCE
- PROPERTY LINE
- GATE/ACCESS POINT
- SECTION CORNER

DRAINAGE

- DRAINAGE
- FLOW DIRECTION
- INDETERMINATE DRAINAGE

TRANSPORTATION/UTILITY

- VEHICLE ACCESS
- RAILWAY
- PIPELINE
- POWERLINE

SITE FEATURES

- DIKE
- STANDING LIQUID
- SL — STANDING LIQUID (SMALL)
- EXCAVATION, PIT (EXTENSIVE)
- MOUNDED MATERIAL (EXTENSIVE)
- MM — MOUNDED MATERIAL (SMALL)
- CR — CRATES/BOXES
- DR — DRUMS
- HT — HORIZONTAL TANK
- PT — PRESSURE TANK
- VT — VERTICAL TANK
- CA — CLEARED AREA
- DG — DISTURBED GROUND
- FL — FILL
- IM — IMPOUNDMENT
- LG — LAGOON
- OD — OPEN DUMP
- OF — OUTFALL
- SD — SLUDGE
- ST — STAIN
- SW — SOLID WASTE
- TR — TRENCH
- WD — WASTE DISPOSAL AREA